



THE
ANNUAL REPORT
UPON
The Health and Sanitary Condition
OF THE
BOROUGH of TUNBRIDGE WELLS,

For the Year ended December 31st, 1897,

BY

- WM. STAMFORD, -

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Tunbridge Wells :

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Medical Officer of Health's Report

For the Year ended December 31st, 1897.

*To the Chairman and Members of the Health Committee of the Council
of the Borough of Tunbridge Wells.*

GENTLEMEN,—

I have pleasure in laying before you my Report upon the health and sanitary condition of the Borough of Tunbridge Wells during the year ended December 31st, 1897, and again I have to record that the vital statistics are quite up to the high standard characteristic of them for many years; also that the sanitary operations conducted with much untiring effort during the year have successfully coped with diseases of the Zymotic Class.

Population.—The population of the Borough, estimated in my usual way, by a method based upon a suggestion made by the Registrar General, numbered 30,255 on June 30th, an increase of 360 upon the number of inhabitants on June 30th, 1896.

Births and Birth-Rate.—The number of births registered during the year was 615, of which 305 were boys, and 310 were girls, being a decrease of 65 on the number of births which took place during 1896.

The birth-rate per 1 000 of the inhabitants was 20·32, as against 29·7 for England and Wales.

Deaths and Death-Rate.—The deaths registered, including 32 deaths not properly belonging to the statistics of the Borough, numbered 370, against the decennial average of 415, and being 40 less than the number of deaths registered during 1896.

The death rate, which in the preceding three years had been 13·4, 13·3, and 13·7 respectively, was 12·22 per 1,000 of the in-

habitants, which is the lowest annual death-rate on record. The death-rate for England and Wales was 17·4 per 1,000.

TABLE I.
COMPARISON OF DEATH-RATES FOR TEN YEARS.

1888	...	...	...	...	14·0
1889	...	...	...	...	13·3
1890	...	...	...	...	13·3
1891	...	...	...	...	13·4
1892	...	...	...	...	15·9
1893	...	...	...	...	14·8
1894	...	...	...	...	13·4
1895	...	...	...	...	13·3
1896	...	...	...	...	13·7
1897	...	...	...	...	12·2
The mean death-rate for ten years...					13·7

Correction of Death-Rate and Foreign Mortality.—The number of deaths occurring in the cases of visitors, resident in the Borough for a period less than three months, and of patients from places outside the Borough removed for treatment to the wards of the General Hospital, was 32, or one in 12 of the total number of deaths recorded.

By deducting these deaths as not properly belonging to the statistics of the Borough, I find the true death-rate to be the remarkably low one of 11·1 per 1,000 of the inhabitants.

Such a method of computing the actual or corrected death-rate is now recognised in many of the Metropolitan Districts, as well as in provincial boroughs of considerable magnitude, but nowhere can the method be more necessary to accuracy than in a place where there is always a large floating population, mainly composed of health seekers and therefore containing a large proportion of invalid lives.

I have recorded a corrected death-rate for a period, including the year under review, of eight years, and a glance at the following table shows the importance of the procedure, and also that the corrected death-rate for 1897 is the lowest of the series.

TABLE II.
CORRECTIONS OF DEATH-RATES FOR EIGHT YEARS.

		Ordinary Death-Rate.		Corrected Death-Rate.
1890	...	13'3	...	12'8
1891	...	13'4	..	12'2
1892	...	15'9	...	12'5
1893	...	14'8	...	12'9
1894	...	13'4	...	11'7
1895	...	13'3	...	12'0
1896	...	13'8	...	11'8
1897	...	12'2	...	11'1

Quarterly Returns.—The mortality during the several quarters of the year was distributed in an unusual manner, the second quarter having shewn the heaviest loss, this being usually the case with the first quarter ; and the fourth quarter which usually shews the second heaviest return, shews, on account no doubt of the mild character of the weather, a very light return. In fact it is curious to note that the incidence of mortality in the several quarters of 1897 was strangely reversed from the usual order of things, the Winter quarters shewing a lighter mortality than the Summer quarters.

It will be seen however that the mortality in the second quarter was not abnormally high for the period of the year, and indeed that the figures for the other quarters are exceptionally low.

TABLE IV.
**SHEWING THE RELATIVE QUARTERLY
MORTALITY FOR FIVE YEARS.**

	1893	1894	1895	1896	1897
1st Quarter { Rate per 1000 per annum ...	14'5	14'8	15'6	11'6	11'0
2nd Quarter { Rate per 1000 per annum ...	14'9	14'3	13'2	12'1	14'5
3rd Quarter { Rate per 1000 per annum ...	13'1	11'1	12'1	11'4	11'9
4th Quarter { Rate per 1000 per annum ...	17'0	13'2	12'5	19'4	11'3

Correction of Quarterly Death-Rate.—The foreign mortality affected the figures for the four quarters as follows : —In the first quarter there were 83 deaths registered, of which 5, equivalent to 6 per. cent., did not belong to the Borough, as explained under a previous heading.

In the second quarter the number of deaths was 110, of which 10, equivalent to 9 per cent., were foreign. In the third quarter there occurred 91 deaths, of which 9, equivalent to 10 per cent., were foreign ; and in the fourth quarter there were 86 deaths, of which 8, equivalent to 9·3 per. cent., were of this class.

The mortality of the several quarters, with the correction for mortality foreign to the statistics proper to the Borough, is set forth in the following table :—

TABLE V.

	Number of Deaths.	Rate per 1,000 per annum.	Number of Deaths deducted.	Corrected Death Rate per annum.
1st Quarter ...	83	11·0	5	10·3
2nd Quarter ...	110	14·5	10	13·1
3rd Quarter ...	91	11·9	9	10·7
4th Quarter ...	86	11·3	8	10·2

Disturbing Influences.—It is well, before leaving the question of the gross mortality, to note that by a slight visitation of Influenza there was a loss in the first quarter of 6 lives, and in the last quarter of 4, while in the second quarter one death was registered from this cause, making a total of 11 cases in the year. From Suicide and Injuries there were 23 deaths, against nine in the previous year.

Infant Mortality.—The mortality from infantile diseases was comparatively light as compared with the rate for the country generally, and that for this Borough in previous years.

The number of deaths under one year of age was 54, as against 615 born, giving a rate of 87·8 per 1,000 born, as against 117·6 in 1896, and 156 per 1,000 born for England and Wales.

The importance, from a statistical point of view, of the conservation of infant life is forcibly brought out in the returns of the Registrar General for England and Wales for the year 1897.

From these I am able to extract the following information :—
156 out of every 1,000 born died during the first year of life ; 8·8 out of every 1,000 aged between 1 and 60, died during the year ; 66·2 out of every 1,000 aged over 60, died during the year

Had the infant mortality of this Borough been equal to that of the country generally, the loss would have been 95 instead of 54, and our general death rate would have been 13·7 instead of 12·2.

It is important therefore to take every precaution to insure the protection of infant life in face of the enormous avoidable loss which now obtains here as elsewhere. (See Table VI.)

This can best be done by educating the people in the management of their infants, by insuring the careful sanitary regulation of dairies, cowsheds, and the homes of the poor, and by providing proper housing for the artizan and poorer classes.

TABLE VI.

RATE OF INFANT MORTALITY FOR SIX YEARS.

1892	Death-rate of Infants under 1 year per 1,000 born			114·9
1893	"	"	"	110·7
1894	"	"	"	88·5
1895	"	"	"	112·8
1896	"	"	"	117·6
1897	"	"	"	87·8

Mortality at Several Ages.—Table VII. shews the mortality in groups of ages contrasted for a period of five years. During the year 1897 the striking features are a diminution in the mortality under 1 year of age, and at ages over 60.

TABLE VII.

	1893	1894	1895	1896	1897
Deaths at under 1 year of age ...	69	58	66	80	54
„ at 1 & under 5 years of age	30	28	41	26	24
„ „ 5 „ 15 „	26	18	14	24	15
„ „ 15 „ 25 „	22	18	17	19	20
„ „ 25 „ 60 „	113	125	93	—	—
„ „ 25 „ 65 „	—	—	—	105	109
„ „ 60 and upwards	167	144	164	—	—
„ „ 65 „	—	—	—	156	145

148.

Deaths at Advanced Ages.—The following deaths took place at advanced periods of life :—

Deaths at over 90	...	...	...	5
„ under 90 and over 80	...	...	...	41
„ „ 80 „ 70	...	...	...	70
„ „ 70 „ 60	...	...	...	60
				168

The total number of deaths at all ages having been 370, it follows that no less than 45 per cent. or nearly one half took place at these advanced ages.

Zymotic Diseases.—The loss from diseases of this class was the same as that for 1896, 29 in number, and giving a death-rate per 1000 of the estimated population of 0.95, as against 0.97 for 1896.

The Zymotic Rate for London was 2.55 per 1,000, while that for England and Wales was 2.15 for the same period, so that the ratio of loss from Zymotic causes in Tunbridge Wells must be looked upon as an extremely low one.

The two principal causes during 1897 were Diphtheria which was prevalent throughout the country, and Whooping Cough.

TABLE VIII.

CONTRASTING THE MORTALITY FROM ZYMOTIC CAUSES FOR TEN YEARS.

	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897
Scarlet Fever	0	2	1	0	1	0	1	0	0	2
Continued Fever	0	1	1	0	1	2	1	0	0	1
Erysipelas and Pyæmia ...	0	1	0	4	3	2	1	0	0	1
Diphtheria	9	3	5	4	5	9	5	8	14	10
Diarrhœa and Dysentery ...	1	2	4	1	0	8	0	3	2	2
Smallpox... ..	0	0	0	0	0	0	0	0	0	0
Measles	1	5	3	0	15	2	0	0	10	0
Whooping Cough	12	1	8	2	4	10	2	10	2	12
Croup (Membranous)	1	2	2	1	3	1	1	0	1	1
Total Number of Deaths from Zymotic Causes	27	17	24	12	32	34	11	21	29	29
Percentage of the total number of deaths from all causes	6·2	4·5	6·4	3·2	7·0	7·9	2·9	5·3	7·0	7·8
Zymotic Death-rate per 1,000 of estimated population ...	0·70	0·61	0·85	0·42	1·12	1·25	0·38	0·71	0·97	0·95

Scarlet Fever.—The notified cases of Scarlet Fever numbered 129, as against 74 in 1896, and 105 in 1895. Of these cases only two proved fatal.

Most of the cases were of a mild type, and some of them were imported.

I have again to point out that the spread of this disease has been greatly due to the circumstance that parents do not call medical advice till the rash has been well established, and the child become a source of infection for other children. It is of the utmost importance that as soon as the rash appears, parents, if they have not already done so, should call in medical aid, and notification would then insure the attention of the Sanitary Authority to the proper isolation or removal of the child affected. Again, mild cases of Scarlet Fever are allowed to get well without medical advice having been obtained, the consequence being that no notification reaches me, and the children are allowed, as soon as the parents think fit, to mingle in play and at school with other children.

Typhoid Fever was the cause of one death. This patient was brought from Hadlow, and died in the General Hospital; other forms of continued fever causing no mortality.

Fourteen cases were notified, but two of the notifications were duplicates referring to one case.

Three of these cases are known to have been imported, two from Maidstone, and one from Hadlow.

Erysipelas caused one death.

Diphtheria.—Of Diphtheria I received 117 notifications during the year, one of which having been proved to refer to a case of Scarlet Fever was also included in the notifications under that heading. The fatal cases numbered 10.

This disease was prevalent all over the country, and in this Borough an outbreak took place at Rusthall and Lower Green, on the boundary, which was traceable to the water supply, derived from a spring at Lower Green not forming part of the Town supply. This spring was found to be contaminated, the dip-hole receiving a back flow from a contaminated pond. The water was examined by Dr. Stevenson; and on receipt of his report, water was supplied gratuitously from a stand pipe, and steps were taken to enforce a supply to each house from the Borough mains. Notice was also posted that the water from the spring was unfit for domestic use.

Diarrhœa and Dysentery.—There were two deaths registered under this heading, an exceedingly good result.

Smallpox.—As in many previous years, there were no cases of this disease.

Measles.—This disease caused no mortality.

Whooping Cough was very prevalent, and was the cause of 12 deaths, as against the decennial average of 6.

Membranous Croup was the cause of one death.

Notification of Infectious Diseases.—Under the provisions of the Infections Diseases (Notification) Act, 1889, the following cases were notified to me :

Scarlet Fever...	...	...	129 cases	} Two notifications of one case.
Diphtheria ...	...	...	117 „	
Erysipelas ...	...	...	18 „	
Typhoid Fever ...	...	...	14 „	Two duplicates.
Puerperal Fever ...	...	...	4 „	

282 Notifications.

280 Cases.

Of this number, 15 ended fatally as already detailed. In 1896 there were 179 notifications, also with 15 fatal cases.

The number of cases removed for treatment and isolation to the Sanatorium was 111, all of whom recovered except one lad, who was already in a dying state when admitted and died shortly afterwards.

I have to thank the members of the medical profession practising in the Borough, for the promptness of their notifications and the endeavours they have made to facilitate the working of the Act, which have been of the greatest service in furthering my labours for the limitation of the spread of infection at the earliest possible moment.

The Sanatorium.—This institution has now completed a second year of useful work, providing, as I have already said, accommodation, treatment and isolation for 111 cases of infectious diseases, removed from homes where their presence was a continued menace against the health of the Borough. Out of the 111 cases so dealt with, one only, that referred to in the preceding paragraph, succumbed, his hopeless condition on admission having been due to the want of sufficient care at home.

In 1896, all the cases admitted were discharged cured, to the number of 64.

These results I am convinced will inspire confidence in the minds of burgesses who, having the misfortune to contract infectious disease in their families, have to consider the question of the removal of their children for isolation and treatment, and I cannot too strongly urge upon parents the public duty, which for the common protection of their own households and the health of the community, calls upon them to promptly avail themselves of the provision that at great cost has been made for this purpose.

The matron has, during the year, been appointed head nurse, and thus has the entire responsibility of the hospital.

I take this opportunity of expressing my appreciation of her services, which have been of great value to me in my work there, and I am informed that the other members of the staff have continued to give the matron and superintendent a good and faithful performance of their duties.

Water Supply.—Owing to the drought of the latter part of the year, the springs have not yet broken, but I am pleased notwithstanding, to report that with the assistance of the water obtained from the bore-holes, we have been able to maintain a constant supply throughout the year, and have also been able to assist our neighbours at Southborough by supplying them with as much water as they required.

In my last report I earnestly commended to the consideration of the Council, the reports of Dr. Stevenson and Sir E. Frankland as to the desirability of filtration, and it is with pleasure that I have learnt that the Council has acquired land for filter beds, and intend to proceed with the works.

I cannot too strongly urge upon the Council the necessity of using all possible despatch in the completion of the filter beds, as it is a matter of vital importance to the health of the Borough that there should be no unnecessary delay.

Sewer Ventilators.—During the year a large number of surface sewer ventilators have been removed or closed, and nearly all the open gullies have been trapped, ventilation for the sewers being provided by a ventilation shaft wherever required.

This is a work which will add much to the comfort of the inhabitants, by carrying disagreeable odours from the streets, and I shall be pleased to see so good a work pushed to its completion.

Indoor Baths.—The builders have made excellent progress with the Indoor Baths, and I trust that they will complete within the time allowed by the contract, in order that the baths may be opened in the Summer or early Autumn.

Labourers' Dwellings.—In my report for last year, I called attention to the desirability of your taking advantage of the powers given you by a wise legislature for the erection of cottages for the occupation of the respectable and provident poor.

During the year 1897, the Council has adopted part III. of the Housing of the Working Classes Act (1890), and has taken steps for the acquisition of land, at which I am extremely pleased; and I trust that it will push on so excellent a scheme for relieving the overcrowding that still exists in many of the poorer parts of the Borough.

With the assistance of the landlords we have done a good deal during the year in improving the sanitary condition of many old homes, and have thereby increased the comfort of many poor people. Much remains to be done in this respect, and I trust that we shall have the assistance of all right-minded owners of cottage property in our efforts which are directed solely for the public weal.

Unless this assistance be given you will of course have no alternative but to exercise to the full the ample powers which Parliament has placed in your hands.

Sanitary Work.—The Report of the Sanitary Inspector is appended, and shews a record which surpasses all previous efforts in this direction.

Finally, I would state that the health of the Borough was satisfactory at the end of the year.

I am, Gentlemen, your obedient servant,

WILLIAM STAMFORD,

Medical Officer of Health.

APPENDIX.

SUMMARY OF MEDICAL OFFICER OF HEALTH'S REPORT.

For the Year ending December 31st, 1897.

Estimated Population	30'255
Number of Deaths	370
Rate per 1,000	12'22
Corrected Death-rate (after deducting 32 foreign deaths from total)...	11'10

AGE AT DEATH.

Under One Year	54
One, and Under Five	24
Five, and under Fifteen	15
Fifteen, and under Twenty-five	20
Twenty-five, and under Sixty-five	109
Sixty-five years and upwards... ..	145 148

CAUSES OF DEATH.

Consumption	25
Bronchitis. Pleurisy, and Pneumonia	41
Diseases of Brain and Nervous System—including convulsions in children	34
Old Age	32
Diseases of Organs of Circulation	44
Diseases of Digestive Organs	23
Malignant Diseases	31
Congenital Diseases in Infants	3
Tubercular Diseases	11
Urinary Diseases	14
Premature Birth and Atrophy	16
Parturition	5
Rheumatic Fever	2
Puerperal Fever	0
Suicides and Injuries	23
Influenza	11

ZYMOTIC DISEASES.

Scarlet Fever	2
Continued Fever	1
Erysipelas and Pyæmia... ..	1
Diphtheria	10
Diarrhœa and Dysentery	2
Small Pox	0
Measles	0
Whooping Cough... ..	12
Croup (Not Spasmodic)... ..	1
All other Diseases	62

TOTAL 370

Number of Births (Boys 305; Girls 310)	615
Birth Rate per 1,000	20'32

BOROUGH SANITARY INSPECTOR'S OFFICE,
TOWN HALL,
TUNBRIDGE WELLS.

March 2nd, 1898.

Sir,

It is now my pleasure to hand you this, my Fourth Annual Report on the general work which has been carried out in the Borough under my supervision during the past year. I venture to state that it would be difficult to find a Town in the South of England, of the same acreage and population as this Borough, in which more sanitary works have been carried out than have been done in this Town during the year.

Many drains which have been found defective have been repaired and reconstructed, and many hundreds of defects in Sanitary fittings have been attended to. Many houses however, still remain in a condition which renders improvements necessary. I would here like to point out a matter which I have drawn attention to in my previous reports, *i.e.*, many people make their homes unhealthy by the crowding of chicken, rabbits, etc., on whatever small piece of ground they may have in the rear of their houses. I have noticed on more than one occasion, that an ill-kept chicken run is found to exist at houses, or in near proximity to houses, where Diphtheria breaks out. I am quite sure that no benefit whatever is derived by keeping chicken in confined places, and I strongly urge the Working Classes to keep their yards and gardens clean and tidy, and endeavour to cultivate a few flowers, which I am sure they will find an excellent substitute for Croupy and Diphtheritic chicken.

Whilst speaking of Diphtheria, I should like to refer to the outbreak which occurred at Lower Green during the Summer. The Water used by the Occupiers of cottages in that district, has for some years, been obtained from a Spring which rises in a dipping hole, and then overflows into a Pond; the Water in this Pond is rendered foul and offensive, owing to the horses and cattle being allowed to walk into the pond to drink; this Water at times flows back into the dipping hole, and no doubt this was the cause of the outbreak of Diphtheria. I am pleased to report that we have caused the Town Water to be laid on to every cottage in the neighbourhood, notwithstanding the desire of the Occupiers to be allowed to still continue drinking the contaminated Water. Since the Town Water has been used for domestic purposes there has not been a single case of Diphtheria.

A few cases of Typhoid Fever were reported during the autumn. There is no doubt that the infection was brought from Maidstone. Immediate and effectual steps were taken to prevent the spread of the disease; the fœcal matter from each patient was carefully collected daily in special tanks and destroyed under my personal supervision. (Chloride of lime and commercial carbolic acid being freely used.)

The disinfection of infected rooms and bedding has been carried out under my personal supervision, and this work is most thoroughly carried out in the Borough.

The deposit of stable refuse has been a constant source of nuisance owing to the accumulation of the refuse: it is very difficult to obtain the removal of this accumulation. I should like to repeat a paragraph from my Report of 1895. "Where peat moss litter is used there is no nuisance during the accumulation, the refuse really makes a crust on the surface preventing the escape of the foul gases but when this crust is broken the nuisance becomes very bad indeed; the receptacles for the refuse are not always the most desirable ones, seldom can the rainwater get away from the pits, the bottom being below the level of the surrounding soil; in the case of sunken pits with wooden flaps, there is a continual nuisance, the bottom of the pits being in time filled with a reeking wet mass;

this is never properly cleared out on account of the offensiveness of the odours which arise, consequently the nuisance gradually gets worse and worse. I strongly recommend moveable galvanized iron cages covered so as to prevent rain entering and at the bottom a cement platform at least two inches above the ground level. For livery stables or where a large quantity of refuse necessarily accumulates I recommend an old wagon, boarded inside and tarred or lined in some efficient way, and when the wagon becomes full of refuse it should be removed without disturbing its contents."

Many parcels of food have been examined during the past year. I have only found it necessary to forward seven samples to the Borough Analyst, and he reported that all the samples submitted were genuine.

A large quantity of beef was seized, condemned, and destroyed, and the person in whose possession it was found, cautioned.

Factories proper do not exist in the Borough, but we have many Workrooms and Laundries, which come under the Factories Act. These and all Slaughter Houses, Dairies and Cowsheds have been inspected as often as my other duties would allow.

I have noticed with pleasure the improved system and more frequent collection of house refuse and also the improvement in sewer ventilation.

I am also glad that several defective sewers, to which I called attention, have been, or are being, thoroughly overhauled, and, where necessary, re-laid.

It also gives me pleasure to record that drainage regulations have been made. These will, I am sure, be of great assistance both to me and the Borough Surveyor in the carrying out of our duties.

I think it well to call attention to the desirability of watering the streets before sweeping them, thus doing away with much unpleasantness and possibly evil results.

I append a Special Report of the Sanitary Congress, held last September, in Belgium.

I also append a list of Works carried out through my Department during the past year,

In conclusion, I desire to thank the Borough Officials generally for the assistance which they have given me in the Work of a Department which is slowly but surely being recognized as a most valuable one.

I am Sir, your obedient servant,

JAMES CAVE,
Chief Sanitary Inspector.

W. STAMFORD, ESQ.,
Medical Officer of Health.

Summary of Works, &c., carried out.

- 280 Complaints have received attention.
- 62 House drains have been re-constructed.
- 80 House drains have been repaired.
- 172 w.c.'s have been supplied with flushing tanks, or repaired.
- 53 Ventilating shafts to drains have been erected.
- 29 Defective soil pipes abolished and new ones erected.
- 32 Manholes have been constructed.
- 440 Houses and other premises have been inspected.
- 780 Visits have been made to works in course of progress.
- 92 Rain pipes have been cut off from drains or repaired.
- 330 New traps substituted for defective ones.
- 13 Wells have been dealt with.
- 132 Homes have had the town water supply laid on.
- 5702 Dustbins have been periodically emptied and cleansed
- 52 Various improvements have been carried out.
- 230 Loads of offensive matter removed.
- 232 Rooms have been disinfected.
- 23 Parcels of bedding have been disinfected.
- Some hundreds of chicken, rabbits, ducks and pigs removed.
- 230 Parcels of food examined.
- 7 Samples of food analysed.
- 4 Cesspools have been dealt with.

APPENDIX.

Reprinted from the "Kent and Sussex Courier."

METEOROLOGICAL NOTES AT TUNBRIDGE WELLS IN 1897.

The Jordan (photographic) recorder gave 1,806 hours 30 minutes of sunshine (part of the sunshine for April is estimated from the record of the burning glass, as it was necessary to remove the instrument from its position for some days). The most it showed in any one month was 274 hours 24 minutes in July; and the most in any one day, 15 hours 5 minutes, on June 13th.

The Campbell-Stokes (burning-glass) recorder gave 1,625 hours 47 minutes. This showed most in May, when 251 hours 27 minutes were recorded. It also showed the most for one day (14 hours 8 minutes) on June 13th.

The Jordan did not record any on 67 days, and the Campbell-Stokes on 69 days. There was no sunless day either in May or August.

The Jordan recorder first showed

10	hours	in	one	day	on	March	19th.
12	"	"	"	"	"	May	4th.
14	"	"	"	"	"	May	21st.
15	"	"	"	"	"	June	13th only.
It	last	showed	14	hours	on	July	14th.
"	"	"	12	"	"	Aug.	10th.
"	"	"	10	"	"	Sept.	18th.

The Campbell-Stokes recorder

First	showed	10	hours	on	March	30th.
"	"	12	"	"	May	4th.
"	"	14	"	"	May	21st.
Last	"	14	"	"	June	13th.
"	"	12	"	"	Aug.	10th.
"	"	10	"	"	Sept.	11th.

The greatest heat in the sun was 136.3 on July 19th. The only days on which we have recorded a higher temperature during the last nine years were June 7th, 1889, when it reached 137 deg., and June 28th, 1892, when it was 136.8 deg. During the very hot summer of 1893 it did not rise above 136 deg.

The highest temperature in the shade was 85·8 deg., on both the 4th and 5th of August. This has only been surpassed during the nine years in 1893, when it rose to 89 deg. The hottest night of the year was that between the 5th and 6th of August, when the thermometer did not fall below 59·8 deg. The lowest temperature 4ft above the ground on Mount Ephraim was 21 deg. on January 18th, and on the grass, 7·8 deg. on January 29th. The mean temperature of the year was 49·3 deg. The daily range was greatest (29·7 deg.) on May 23rd, and least (1·2 deg.) on January 20th; the mean being 14·9 deg. The difference between the wet and dry bulbs at 9 a.m. was greatest (12·2 deg.) on July 15th, the mean being 2·9 deg.

The temperature—

First reached	100	in the sun	on Feb. 22nd.
"	"	110	" " April 13th.
"	"	120	" " May 18th.
"	"	130	" " June 14th.
Last	"	130	" " Aug. 10th.
"	"	120	" " Aug. 31st.
"	"	110	" " Oct. 15th.
"	"	100	" " Nov. 18th.

It was first	60	in the shade	on March 23rd.
"	"	70	" " May 18th.
"	"	80	" " June 23rd.
" last	80	"	" " Aug. 5th.
"	"	70	" " Aug. 16th.
"	"	60	" " Oct. 31st.

There were 50 frosts in the air, and 125 on the grass.

The last in the air in Spring	was on May 13th.
" first	" Autumn " Nov. 11th.
" last on the grass in Spring	" May 25th.
" first	" Autumn " Sept. 4th.

The temperature of the soil at the depth of 1ft., was highest (69·6 deg.) on August 6th (which is the highest we have recorded in the nine years); and lowest (34·6 deg.) on January 30th and February 1st and 2nd. The mean was 50·3 deg.

It first reached	50	on April 28th.
"	"	60 " June 14th.
It last	"	60 " Sept. 1st.
"	"	50 " Oct. 24th.

The anemometer, showing the horizontal force of the wind, recorded 92,443 miles. The most windy month was March, which

showed 10,909 miles. This has only been exceeded during the last seven years by December, 1891, when 10,915 were recorded. The next most windy month in 1897 was December, with 10,688 miles. June was the calmest month; in it 6,062 miles were registered. The most windy day was December 29th, which showed 962 miles, nearly 100 miles more than any day in the last seven years. This was due to there being hardly a lull all the time. The next highest record was 866 miles, on December 5th, 1895. The calmest days were November 20th and December 4th, on each of which only 46 miles were recorded.

The wind was	N.	on	35	days.
"	N.E.	"	37	"
"	E	"	36	"
"	S.E.	"	42	"
"	S.	"	51	"
"	S.W.	"	49	"
"	W.	"	68	"
"	N.W.	"	40	"
"	Calm	"	7	"

The total rainfall was 27.65 ins., which fell on 176 days. The only years in the last nine which fell below this were 1893 with 26.05 ins., and 1895 with 26.69 ins.; the mean rainfall of the eight preceding years was 31.29 ins. March was the wettest month, when 5.14 ins. fell, and the wettest day was March 2nd, with 1.11 in. The driest month was October, with only .25 of an inch, and July also had only .28 of an inch of rain. Snow fell on 15 days. There were 28 fogs. There was thunder or lightning on 24 days—in most cases distant. The mean amount of cloud at 9 a.m. was 7.9 (10 representing overcast). The most cloudy month was February, with a mean of 9. The least so was May, with 5.3.

F.G.S.